

The Atom and its History WS 6

1. Here are three isotopes of an element: ${}_6^{12}\text{C}$ ${}_6^{13}\text{C}$ ${}_6^{14}\text{C}$
- The element is: _____
 - The number 6 refers to the _____
 - The numbers 12, 13, and 14 refer to the _____
 - How many protons and neutrons are in the first isotope? P=_____N=_____
 - How many protons and neutrons are in the second isotope? P=_____N=_____
 - How many protons and neutrons are in the third isotope? P=_____N=_____

2. Complete the following chart:

Isotope Name	Atomic #	Atomic Mass	Protons	Neutrons	Electrons
Uranium - 235		235			
Uranium - 238		238			
Boron - 10		10			
Boron - 11		11			
			6	6	
		14			6
		15	7		
	7			13	
	16	23			
		25			16
Sodium -		22			
Sodium -		20			
			29	30	
				32	29
		110	47		
				62	47

3. Naturally occurring europium (Eu) consists of two isotopes with masses of 151 and 153. If in a sample of 100 Europium atoms, Europium-151 has an abundance of 48 isotopes and Europium-153 has an abundance of 52. What is the atomic mass of europium?
4. If 100 samples of the element Strontium consists of four isotopes with masses of 84 (abundance = 1), 86 (abundance = 20), 87 (abundance = 14), and 88 (abundance = 65). Calculate the atomic mass of strontium.
5. Uranium has three common isotopes. If the abundance of U - 234 is 5, the abundance of U - 235 is 23, and the abundance of U - 238 is 72, what is the average atomic mass of uranium?